

Amendments to the Claims

1. (Currently amended) A method of performing total knee arthroplasty on a patient's knee, the method comprising:

forming an incision through skin of the patient's body;

positioning a cutting guide member in alignment with a bone of the knee;

cutting bone of at least first and second condyles of the knee, including

initiating a cut in the bone while guiding a cutting tool along a guide surface of the cutting guide member to form a cut surface having an initial cut length, the guide surface having a length;

angularly disposing the cutting tool along the guide surface ~~in order to extend the cut surface from the initial cut length to an extended cut length, the extended length being cut a section of the bone having a cut length~~ longer than the length of the guide surface, at least a portion of said cut ~~section of bone~~ surface being located within the body with respect to the incision;

removing the cutting guide member from against the bone, and then completing the cut ~~of the section of in the~~ bone without using ~~[[a]] the~~ guide surface of the cutting guide, while guiding the cutting tool along the cut surface ~~in the cut section~~; and

positioning a total knee replacement component against the cut surface of the bone of the knee;

~~wherein the cut of the section of bone has a length longer than the length of the guide surface of the cutting guide member, and~~

~~wherein bone may be prepared for a total knee arthroplasty with the length of the guide surface shorter than the cut length of the cut surface of the bone.~~

2-3. (Canceled)

4. (Currently amended) The method of claim 1 wherein positioning the total knee replacement component includes positioning a first portion of the total knee replacement against

the cut surface of the bone, and subsequently positioning a second portion of the total knee replacement component against the ~~[[same]]~~ cut surface of the bone.

5. (Currently amended) The method of claim 4 further including the step of substantially immovably connecting the first and second portions of the total knee replacement component together after both portions have been positioned within the body, against the cut surface of the bone.

6. (Previously presented) The method of claim 1, further including suspending a distal portion of the patient's leg, the distal portion including an inferior portion of the knee and portions of the leg inferior to the knee, from the knee, including bending the knee to a flexed condition, and cutting the bone of the knee while the knee is bent in the flexed condition.

7. (Previously presented) The method of claim 6 wherein bending the knee includes hyperflexing the knee by moving a bone on a first side of a joint anteriorly with respect to a bone on a second side of the joint opposite said first side, whereby additional working space is created within the joint, and cutting the bone of the knee includes cutting the bone of the knee while the knee is hyperflexed.

8. (Previously presented) The method of claim 1 further including distracting the knee while a distal portion of the patient's leg, the distal portion including a portion of the knee and portions of the leg inferior to the knee, is suspended from the knee, and wherein at least one of the steps of cutting the bone and positioning the total knee replacement component is performed while the knee is distracted.

9. (Original) The method of claim 1 further including displacing a patella of the knee.

10. (Original) The method of claim 9 further including cutting the patella while the patella is displaced.

11. (Original) The method of claim 10 wherein the patella is displaced with an inner side of the patella remaining facing inward.

12. (Original) The method of claim 11 wherein the inner side of the patella remains facing inward during the cutting and positioning steps.

13. (Original) The method of claim 1 further including everting a patella of the knee.

14. (Original) The method of claim 13 further including cutting the patella while the patella is everted.

15. (Currently amended) A method of performing a total knee arthroplasty surgery on a patient's joint, the method comprising, in the following order:

forming an incision;

positioning a cutting guide member at least part ways through the incision, against a bone of the joint, the cutting guide member having a guide surface with a length;

initiating a cut in the bone while guiding a cutting tool along the guide surface to form [[a]] an initial cut surface, at least a portion of said cut bone being enclosed by overlying skin and not exposed by the incision;

removing the cutting guide member from against the bone of the joint;

continuing the cut in the bone while guiding the cutting tool along the initial cut surface, forming a final cut surface having a cut length;

positioning a first portion of a total knee replacement component against cut bone of one side of a joint, and subsequently positioning a second portion of the total knee replacement component against the cut bone on the same side of the joint; and

affixing the first and second portions of the total knee replacement component together after both portions have been positioned against the cut bone within the body, each of the first and second portions of the total knee replacement component having an articulating surface;

wherein ~~the cut length is longer than the length of the guide surface~~ ~~bone may be prepared for a total knee arthroplasty through an incision size substantially less wide than the cut length of the cut surface of the bone, and using a guide surface substantially shorter than the cut length of the cut surface of the bone.~~

16-18. (Canceled)

19. (Previously presented) The method of claim 15 further including the step of suspending a distal portion of a patient's extremity connected with the joint.

20. (Currently amended) The method of claim 15 further including the step of distracting the joint, and wherein at least one of the steps of positioning the cutting guide member, positioning the cutting tool, initiating the cut, and ~~completing~~ continuing the cut is performed with the joint distracted.

21. (Previously presented) The method of claim 15 wherein initiating the cut and continuing the cut are performed on a condyle of the bone.

22. (Currently amended) The method of claim 15 wherein initiating the cut and ~~completing~~ continuing the cut are performed on both condyles of the bone.

23. (Cancelled).

24. (Previously presented) The method of claim 15 further including removing the cutting guide member from the bone before continuing the cut.

25. (Original) The method of claim 15 wherein the guide surface comprises a guide slot and the step of positioning a cutting tool includes inserting the cutting tool into the guide slot.

26. (Currently amended) A method of performing a joint replacement surgery on a body of a patient, including cutting away a portion of bone of the joint, the portion of bone cut away having a length, the method comprising:

forming an incision having a length, ~~defining a long dimension of the incision~~, of about 13 cm or less, ~~and a width substantially less than the length~~;

aligning a cutting guide member with a bone of the joint, the guide member ~~having opposite ends with a transverse dimension, defining a width of the cutting guide member, defining a guide surface having a guide surface length~~ which is less than the length of the portion of bone to be cut away;

positioning a cutting tool in association with the guide surface of the cutting guide member;

initiating a cut in the bone while guiding the cutting tool along the guide surface to form a cut surface having an initial cut length;

angularly disposing the cutting tool along the guide surface in order to extend the cut surface to a second cut length, the second cut length longer than the guide surface length and cut a section of the bone wider than the width of the guide member, a swath of the angularly disposed cut being formed at an angle to the long dimension of length of the incision, and ~~defining a width substantially greater than the width of the incision~~; at least a portion of said cut surface being located within the body with respect to the incision; and

continuing the cut in the bone while guiding the cutting tool along the cut surface to extend the cut surface to a final cut length,

wherein both medial and lateral condyles are cut by the cutting tool and wherein the cutting guide member is removed from against the bone of the joint prior to said step of continuing the cut in the bone

~~wherein bone may be prepared for a total joint replacement using a guide surface shorter than the cut length of the cut surface of the bone.~~

27. (Original) The method of claim 26 further including positioning an implant against the cut bone.

28. (Canceled)

29. (Previously presented) The method of claim 26 wherein the cutting guide member is mounted to the bone and offset from a central longitudinal axis of the bone.

30. (Previously presented) The method of claim 29 wherein the joint is a knee, and the cutting guide member is intramedullary mounted to the bone.

31. (Previously presented) The method of claim 29 wherein the joint is a knee, and the cutting guide member is extramedullary mounted to the bone.

32. (Currently amended) The method of claim 26, wherein ~~said cutting guide member is operative when~~ at least half of the guide body surface is disposed laterally to a line defining the longitudinal axis of the bone to be cut during said step of initiating the cut in the bone.

33. (Cancelled).

34. (Cancelled).

35. (Currently amended) The method of claim 26, wherein the swath of the angularly disposed cut is formed at about right angles to the ~~long dimension~~ length of the incision.

36. (Currently amended) The method of claim 26, wherein the joint is a knee, and the ~~long dimension~~ length of the incision is about 10 cm or less.

37. (Currently amended) A method of performing total knee arthroplasty on a patient's knee, the knee having first and second condyles, the method comprising:  
forming an incision having a length of about 13 cm or less;

positioning a cutting guide member in alignment with a bone of the knee, aligning the cutting guide member using references derived independently from an intramedullary device; cutting bone of at least the first and second condyles of the knee, including

initiating a cut in the bone while guiding a cutting tool along a guide surface of the cutting guide member, the guide surface having a length, to form a cut surface having an initial cut length,

angularly disposing the cutting tool along the guide surface in order to ~~cut a section of the bone longer than~~ extend the cut surface from the initial cut length to a second cut length, the second cut length being longer than the length of the guide surface, at least a portion of said cut ~~section of bone~~ surface not protruding past the incision,

removing the cutting guide member from against the bone, and then completing the cut ~~of the section of in the~~ bone, ~~while by~~ guiding the cutting tool along the cut surface, thereby extending the cut surface from the second cut length to a final cut length in the cut section; and

positioning a total knee replacement component against the cut bone of the knee, ~~wherein the cut of the section of bone has a dimension longer than the length of the guide surface of the cutting guide member.~~

38. (Previously presented) The method of claim 15, wherein said step of initiating a cut in the bone is performed by a robot.

39. (Previously presented) The method of claim 15, further including the step of inserting an endoscope through an incision proximate the knee, to visually inspect locations within the knee.

40. (Previously presented) The method of claim 15, further including the step of inserting a cannula into a space within the knee.

41. (Previously presented) The method of claim 40, further including the step of cutting body tissue through the cannula.

42. (Previously presented) The method of claim 41, wherein said step of positioning a total knee replacement component includes inserting said knee replacement component through the cannula.

43. (Previously presented) The method of claim 15, further including the steps of:  
preparing an end portion of the tibia;  
moving a tibial implant through the incision.

44. (Previously presented) The method of claim 1, further including the step of using an optical measuring device to determine if the cut has the desired configuration.

45. (Currently amended) A method of performing total knee arthroplasty on a patient's knee, the knee having first and second condyles, the method comprising, in the following order:  
forming an incision having a length of about 13 cm or less;  
positioning a cutting guide member in alignment with a bone of the knee;  
cutting bone of at least the first and second condyles of the knee, including

initiating a cut in the bone while guiding a cutting tool along a guide surface of the cutting guide member, the guide surface having a length, to form a cut ~~surface~~  
section of the bone,

angularly disposing the cutting tool along the guide surface in order to further cut  
[[a]] the cut section of the bone ~~having such that the cut section of the bone has~~ a cut  
length longer than the length of the guide surface, at least a portion of said cut section  
of bone ~~being located in an interior of~~ overlaid by skin of the patient's body ~~with~~  
~~respect to the incision, the interior of the patient's body defined as that portion of the~~  
~~body normally enclosed by skin,~~



removing the cutting guide member from against the bone, and then completing the cut of the section of bone, while guiding the cutting tool along the cut in the cut section of the bone; and

positioning a total knee replacement component against the cut ~~surface~~ section of the bone of the knee,

~~wherein the cut of the section of bone has a dimension longer than the length of the guide surface of the cutting guide member, and~~

~~wherein bone may be prepared for a total knee arthroplasty through an incision size substantially less wide than the bone to be cut, and using a guide surface substantially shorter than the cut length of the cut section of the bone.~~

46. (New) The method of claim 1, said positioning a cutting guide step further comprising positioning the guide surface of the cutting guide offset with respect to the lateral or medial side of the femur, the guide surface extending only part way across the distal end portion of the femur.

47. (New) The method of claim 1, further including moving the incision or the leg to position the bone to be cut within the incision.

48. (New) The method of claim 1, further including cutting bone of the leg using a milling cutter.